

ABSTRACT

A predistorter is disclosed that predistorts an input signal based on one or more static coefficients that are representative of a non-linear distortion characteristic of an amplifier. The input signal is also processed based on a non-linear gain parameter that reduces an error metric between the input signal and a feedback signal. The nonlinear gain parameter adapts an amount of nonlinearity introduced by the predistorter. The non-linear gain adaptation is performed, for example, when the input voltage is above a threshold input voltage. The input signal can be processed by multiplying the input signal by the non-linear gain parameter followed by table-coefficient processing, or by both multiplying the input by the non-linear gain parameter followed by dividing the table-coefficient processed output signal by the same non-linear gain parameter. The input signal can also be processed based on a feedback gain parameter that compensates for a small-signal gain of the feedback loop. The feedback gain parameter attempts to maintain a small-signal gain of approximately unity.

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